

MODULAR INTERFACE FOR DAMPING MECHANICAL VIBRATIONS

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

[0001] The invention relates to an interface for damping or isolating mechanical vibrations by means of a plurality of energy converter systems. Such interfaces are used, for example, for damping vibrations in the field of general machine engineering, the automotive industry, the construction industry or the aerospace industry.

[0002] Dynamic mechanical interference in the form of vibrations which are excited, for example, by the operation of assemblies (for example power supply assemblies) or by other ambient conditions, are produced in machines, vehicles and similar modules. The frequencies of these vibrations extend into the relatively high frequency acoustic range and bring about undesired dynamic and/or acoustic effects locally at the location where the interference is produced or applied, or further away after transmission over mechanical load paths. This results in losses of comfort, safety problems, damage to components owing to structural fatigue, shortened service life, reduced functionalities etc.

DESCRIPTION OF THE RELATED ART

[0003] What is referred to as material damping, in which the mechanical energy of the vibration is converted directly into thermal energy, is frequently used to damp or isolate mechanical vibrations. Examples of this are elastic or viscoelastic damping systems.

[0004] In addition, measures which are based on other energy converter systems are increasingly used. These energy converter systems generally convert mechanical energy into electrical energy and vice versa. Both effects are used to damp